

## **ATTACHMENT III**

### **LOUISIANA TECHNOLOGY INNOVATIONS FUND - FINAL REPORT**

**09/05/02**

**I DEPARTMENT/AGENCY**

Louisiana Department of Education

**II PROJECT TITLE**

Department of Education WEB-based Data Warehouse System

**III PROJECT LEADER**

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**IV DESCRIPTION OF THE PROJECT**

This is a project to develop and implement a WEB-accessed Education Data Warehouse (EDW). The overall goal of the system is to improve student achievement and teacher quality by providing educational administrators and teachers access to the data they need to make effective decisions. The primary system users are district principals and teachers as well as state and district administrators. Other users include legislators, community leaders and the public at large.

**V POST IMPLEMENTATION REVIEW AND ASSESSMENT**

**A. Executive Summary of Findings**

- A considerable delay of six month in which the Office of State Purchasing (OSP) and the Office of Contractual Review (OCR) could not decide which of the two should be overseeing the process was incurred. This resulted in having to construct two different RFPs that have differing formats and statutory requirements. Other delays, such as a hiring freeze, the request for more information by bidders, and timing of major holiday events also added to the delay.
- The RFP strategy was to present a fixed dollar amount and ask the bidders to propose what of the Louisiana Department of Education's (LDE) data could be housed in the EDW. New Century Technology (NCT) was selected after presenting the most comprehensive plan. Student, staff, financial, and accountability data were planned to be included in the final product.
- The contractor met with LDE staff to understand the business logic behind the data and also to familiarize various interested groups (staff, legislative personnel, and researchers) about the power and utility of a data warehouse.
- After designing a structure to emulate LDE's business logic and constructing an Extraction Transformation and Load (ETL) process, one school year's worth of data was loaded into the warehouse. Various reports were written to verify the legitimacy of the loading process.
- A web interface was constructed to house publicly available reports.
- The warehouse was introduced to the public.

**B. Accomplishments and Best Practices Identified**

- Fourteen different systems comprised of student, financial, testing, staff, and accountability data were loaded into the warehouse.
- A portal at [www.leadr.info](http://www.leadr.info) was deployed for the display of publicly available reports. Over 40 reports are currently available with a projected number exceeding 300.
- School year 2000-2001 has been loaded.
- *Ad hoc* user capability has been supplied with Oracle Discoverer and Business Objects via a portal supplied by the Division of Administration
- State of the Art technology and design features were incorporated into the EDW.

**C. Benefits Achieved/Expected**

- Data is organized in a logical "business-like" format and easily accessible with a query tool, as opposed to residing in various databases and flat files and accessible only with a process language such as COBOL or SAS.
- Data request turnaround has been cut by 75%. It is expected to improve as more data is loaded into the warehouse and the skill set of the users improves.
- More data will become available to the public as customized and parameterized reports are published.
- Various interested groups such as legislative staff and department personnel will have data immediately available during meetings and conferences.

**D. Pitfalls Encountered**

- The bureaucratic maze that preceded the actual design and implementation was exhausting and time-consuming. It needs to be streamlined especially for IT projects.

- While outside the LDE's control, some personnel changes on the part of the contractor necessitated the repetition of information by LDE staff to the new people brought in. A greater insistence on personnel stability is required in projects such as this one.
  - The Department found that while the technical aspects of the warehouse design and implementation went smoothly, the front-end or "user interface" did not. The process required many iterations and different people in order to get a satisfactory portal. A demonstrable template early in the construction process should be a priority.
- E. Recommendations to Agencies Planning to use this Technology
- Meet with the PST staff of OSP and OCR prior to writing the RFP to determine whose responsibility it is. Get the determination in writing.
  - Write result-based RFP with definitive goals and deliverables.
  - As much as is practicable have cleansed data ready in easily loadable and transferable format.
  - Insist on the design of the user interface early.
  - If possible, have a "pilot system" or data mart designed and deployed prior to the full warehouse construction. In this way many of the design problems encountered can be remediated early and carried forward into the other areas under construction.
  - Meet as often as possible with the target audience. User buy-in is essential to the success of the project.
  - Be prepared for continuous modifications, as a data warehouse is a dynamic entity that changes with the needs of its users.

## VI FINAL COST VS. BUDGET

	<u>Category</u>	<u>Budgeted</u>	<u>Actual</u>	<u>Projected Surplus</u>
A.	Equipment	\$ none	N/A	N/A
B.	Software	\$ none	N/A	N/A
C.	Telecommunications	\$ none	N/A	N/A
D.	Professional/ Contract Services	\$ 1,000,000	\$ 991,000	\$ 9,000
E.	Other Costs	\$ none	N/A	N/A
	<b>Total Project Cost</b>	<b>\$ 1,000,000</b>	<b>\$ 991,000</b>	<b>\$ 9,000</b>

## VII ITEMIZED LIST OF PROJECT EXPENSES

- Phase 1: \$91,000  
Team Mobilization and Orientation – Bring the contracted personnel on site and introduce them to the LDE staff who will be providing the functional support for this project. Introduce these new personnel to the various internal systems that are the sources of the EDW data.  
Project Planning – Outline the schedule and key milestones that comprise the development and deployment of the EDW.  
Hardware and Software Planning and Purchase – Procure a Sun Solaris server and Oracle 8i database that will serve as the backbone for the EDW.
- Phase 2: \$198,200  
Hardware and Software Installation and Configuration – Implement the server and database; configure them for optimal usage as an internet-ready repository for education data.  
Functional Test – Perform benchmarks to ensure optimal response time.
- Phase 3: \$297,300  
Warehouse design and system loading – create a logical design for the warehouse; create a physical database structure; load data.
- Phase 4: \$297,300  
Warehouse design and system loading – create a logical design for the warehouse; create a physical database structure; load data.
- Phase 5: \$99,100  
Training Phase – a training curriculum was developed and initial class held
- Phase 6: \$148,650  
Implementation Phase – final structure was created; is being populated.
- Phase 7: \$49,550  
Warranty – as the web service developed unanticipated problems, after acceptance, the remainder of the monies are being withheld pending a satisfactory resolution of these difficulties. It is anticipated that the resolution will transcend the fiscal year boundary.